JP 07-210580

* NOTICES *

1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Industrial Application] this invention relates to the verification under construction of various buildings, or after construction, an on-site inspection of a passage, a railroad, the construction situation of a river, and a maintenance situation, the digital camera loading handicap computer that can be used simply [in case an accident site, record of control of parking violation, etc. are performed further], and the on-site situation record method using this equipment.
[0002]
[Description of the Prior Art] For example, in new building and reconstruction works of various buildings, there are many aspects of affairs which carry out verification record (an on-site inspection is called hereafter) of the state under construction or after construction. If both records of this on-site inspection bring an architectural-design drawing and a camera in a site, a principal contractor contractor and a subcontractor go, it checks whether the building is constructed for the principal contractor contractor as the engineering-drawing side and a rejected region is found out conventionally A principal contractor contractor points that out to a subcontractor, and a subcontractor takes the photograph of an indication part, and is associating and recording this photograph and the indication part on a drawing on a document while he checks on a drawing the part which received indication.
[0003]
[Problem(s) to be Solved by the Invention] However, it was not easy to associate the defective indication part and photograph on a drawing to perform writing to an engineering-drawing side and camera operation in the bad construction site of about [being complicated] and a scaffold.
[0004] Moreover, although it is necessary to keep the data which are such as a result of verification, and were produced during a fixed period, since this storage is kept with a documents gestalt, taking out applicable needed data also takes time and effort out of a huge quantity of verification data later. Moreover, although electronic-file-izing storage data in order to rationalize a documentation is also considered, an engineering-drawing side and a photograph image must be read with an image scanner etc. in this case, and a change does not have time and effort in this thing.
[0005] Such various problems are not restricted to an on-site inspection of the construction situation of a building, but are common also in the work for which other on-sites inspection are needed. For example, in record of an on-site inspection of a passage, a railroad, and the construction situation and maintenance situation of a river, although the photograph of a verification site is taken bringing a broader-based map and camera including the verification schedule site in a site, and checking a verification site on a map, there is the same problem as the above also in such work. Furthermore, there is same problem, when it is based on a said place view when performing maintenance check of a building based on a construction drawing, performing passage maintenance based on a road map, performing river maintenance based on a river map, performing track maintenance based on a railroad track map and performing engineering-works construction and verification of a passage construction situation based on a general map or a road map, and verifying an accident site.

[0006] It is made in view of this present condition, record of record of the construction situation of a building, a passage, a railroad and the construction situation of a river, or a maintenance situation etc. can simplify sharply this kind that was indispensable of on-site-inspection work, and this invention uses as an offer plug the technology in_which of management of record data moreover also becomes easy.
[0007]
[Means for Solving the Problem] In order to solve this technical problem, this invention person proposes the digital camera loading handicap computer of the following composition. That is, while having an interior power supply of portable, it is the digital camera loading handicap computer which was made to carry out bus combination and constituted the image pck-up unit which considers a charge-coupled device and the lens for image formation as the main composition, and is made for the main part of a handicap computer equipped with the bus joint terminal for peripheral-device connection to be equipped with each following means in the main part of a handicap computer. Namely, a storage means to store the drawing or map information including the site of which it is going to do ** verification on broader-based area.
** The display means which gives a change or a division indication of the graphic display of the aforementioned drawing or map information, and the real map image picturized by the image pck-up unit.
** The microprocessor which bears internal processing of the main part of a handicap computer, and signal processing of the image output signal sent out from an image pck-up unit.
** The alter operation means which gives various instructions or carries out a data input to the main part of a handicap computer.
** The means which calls alternatively the drawing or map information including a concrete verification part on narrow area on a display means, and carries out a graphic display from the drawing of broader-based area including the verification schedule site stored in the aforementioned storage means, or the whole map information.
** The means which carries out the specific directions of the concrete verification part on a display means into the drawing of the narrow area by which the graphic display was carried out on the display means, or map information.
** A means to compute the drawing of the part by which specific directions were carried out on the display means, or the position data on map information.
** A means to associate and memorize the real map image data and the aforementioned position data which are sent out from an image pck-up unit.
[0008] It is taken into consideration that a digital camera loading handicap computer (a handicap computer is called hereafter) carries out data transfer between the main computers installed in fixed bases, such as office. connecting as the method of data transfer by the cable which can remove a handicap computer and the main computer -- or although what depends on the radio method using an electric wave, infrared radiation, etc. is employable, more preferably, it is removable to a handicap computer and both the main computers, and it is desirable to use the portability storage which has the storage capacity which can store the drawing or map information including a verification schedule site on broader-based area
[0009] Using GPS (global PONISHONINGU system) used for example, for the navigator for mount etc. in addition to what depends on keyboard grabbing or a pen input unit as a means to call alternatively the drawing or map information on narrow area which includes a concrete verification part from the drawing of broader-based area or the whole map information on a display means is taken into consideration.
[0010] Although you may also include an image pck-up unit in the case in the main part of a handicap computer, it may make that it is removable to the main part of a handicap computer.
[0011] Moreover, the on-site situation record method performed using the digital camera loading handicap computer of the above-mentioned composition mainly consists of each following process.
A) The process which carries out data transfer of the drawing or map information including the site which it is going to verify from the library of the drawing stored in the computer installed in fixed bases,

such as office, or a map on broader-based area to a handicap computer through a portability storage directly.
B) The process which calls alternatively the drawing or the map information including a concrete verification part on narrow area on a display means, and carries out a graphic display from the drawing of the broader-based area stored in the aforementioned storage means, or whole map information while bringing the handicap computer by which the drawing or the map information including the site which it is going to verify on broader-based area changed into the storing state in the storage means in a verification schedule site.
C) The process which computes the drawing of the part concerned, or the position data on map information while carrying out the specific directions of the concrete verification part on a display means into the drawing of the narrow area by which the graphic display was carried out on the display means, or map information.
D) The process which picturizes a verification part after adjusting the posture of a handicap computer so that a concrete verification part may be caught in the visual field of an image pck-up unit.
E) The process which associates mutually the real map image data and the aforementioned position data which are sent out from an image pck-up unit, and is stored in a storage means.
F) The process transmitted to the computer which installed directly the real map image data and position data which were stored by relating mutually in the storage means of the main part of a handicap computer in the fixed base through the portability storage.
[0012]
[Function] Such a digital camera loading handicap computer of composition is used as follows. A surrounding drawing or the whole map information including a verification site is received from the computer first installed in the fixed base, and the handicap computer by which this broader-based area information changed into the storing state is carried into a site. Subsequently, in a site, the drawing or map information including a concrete verification part on narrow area is alternatively called on a display means, and after carrying out the specific directions of the concrete verification part which it is going to copy from now on and deciding on the selection screen further, an object is picturized by the image pck-up unit. Only by carrying out operation of only this, a drawing or the position data of the image pck-up part in the whole map information is computed automatically, and it is stored in a storage means in the state where it was related mutually, together with the real map image data with which this position data was copied by the image pck-up unit. And in the main part of a handicap computer, the data constellation which maintained the correspondence relation between each position data and each on-the-spot photo image data is accumulated only by repeating the image pck-up by the image pck-up unit, repeating the operation which carries out the specific directions of the part for an image pck-up on a display means whenever it changes the candidate for an image pck-up, and is decided.
[0013] Regeneration of this accumulated data constellation can be carried out to the display means of the main part of a handicap computer, it can also be checked, and if it delivers these data constellations to the main computer installed in the fixed base, more advanced data processing and more advanced data control of it will become possible.
[0014] Moreover, since automatic meter reading of a measurement person's current position is carried out when GPS of the communication satellite use which can measure a position absolutely is attached to this handicap computer, it is possible to pinpoint the present outline position automatically from the whole map information, and the specific directions of the part for an image pck-up can be easily carried out on a display means only by tuning finely on the basis of this data.
[0015] When an image pck-up unit is made to the main part of a handicap computer as it is removable, various functions processing can be realized by removing an image pck-up unit if needed, and connecting other peripheral devices, such as a printer and a modem, to the bus joint terminal with which it was equipped with the image pck-up unit, maintaining the handiness of a handicap computer.
[0016]
[Example] Hereafter, it explains based on the example illustrating the detail of this invention. explanatory drawing in which drawing 1 shows the appearance of the handicap computer of this

invention, and drawing 2 are the system configuration views of this handicap computer, and are the content of processing of each means by which drawing 3 resembled the interior of the main part of a handicap computer, and was realized by hardware composition or the software configuration
[0017] One in drawing is a main part of a handicap computer, 20 in drawing is a digital camera adapter for handicap computers (the digital camera adapter 20 is called hereafter), and 30 is a GPS adapter.
[0018] The main part 1 of a handicap computer contains all the basic functions as a computer in the main part case 2 of the size of the grade along which he can have and walk single hand. The interior of the portable internal electrical power sources 5, such as a microprocessor 3, memory 4, various control circuits and a dry cell, and a charge cell, is carried out into the main part case 2. on another side and main part case 2 superficies It is the thin shape and low power which are represented by a liquid crystal display and the plasma display, and has the display 6 in which the graphical display by the dot is possible, and the keyboard 7 as an alter operation means. The keyboard 7 is equipped with funk SHOKI 7a, cursor movement key 7b, etc. In addition, although not illustrated, it is also possible to replace with keyboard entry as an alter operation means, and to adopt a pen input method, and keyboard entry and a pen input can also be used together.
[0019] The bus joint terminal 8 linking directly to a microprocessor 3 is formed in the upper-limit side of the main part case 2. Various peripheral devices, such as the GPS adapter 30, the digital camera adapter 20, and a printer 40 or a modem (not shown), are connectable with the bus joint terminal 8. Although the bus joint terminal 8 of the example of drawing is a scalpel type, it may adopt a male type. The main part case 2 side is equipped with the IC card interface 9 for equipping with IC card 50 as a kind of an external-memory means, and the interface 10 for peripheral-device extension for extending peripheral devices, such as a Magnetic-Optical disk drive (MO) in which a floppy disk drive (FDD), a hard disk drive (HDD), CD-ROM, and rewriting are still more possible, is equipped. any of the memory card which does not build in CPU built-in or CPU as IC card 50 -- although -- it is usable, and although an owner contact type and non-contact type any may be adopted as a coupling scheme with the main part 1 of a handicap computer, it is desirable protection against dust, earthquake-proof, and to deal with it and to use a non-contact type from a viewpoint of ease The IC card interface 9 and the interface 10 for peripheral-device extension may not be established, and may prepare only either. Moreover, although not illustrated, you may establish the RS232C interface and bar code reader interface for connecting a general-purpose modem etc.
[0020] the real map image data incorporated in memory 3 by display 6 -- or while reproduction presenting of the drawing read through IC card D, FDD, or the cable or map information is possible, it is possible to display directly the image output signal from CCD21, and it is constituted so that the monitoring of the present photography state can be performed By the ability checking the present photography state with the display 6 of the main part 1 of a handicap computer, it can carry out, while adjustment of the photography range, adjustment of picture concentration, adjustment of resolution, etc. look at the display screen, and picture incorporation in an optimum state comes be made. Although picture concentration adjustment and resolution adjustment may form an equalization circuit separately and may perform it in hardware, processing in software is desirable from the viewpoint of versatility, and a viewpoint of common use of a microprocessor 3. As picture concentration adjustment, the technique of thinning out flicker of a dot at intervals of predetermined etc. is employable. Moreover, you may compress image data in software. A screen display changes the information read in memory 4, and the real map image data picturized by the image pck-up unit now from IC card 50 or FDD, displays, or it is divided into two or more screens, and it is constituted so that it may indicate by simultaneous.
[0021] The program for image processings is permanently stationed at memory 4, or is read from IC card 50, FDD, etc. if needed. It can write in ROM or can adopt the permanent residence to up to memory 4 carrying out, and writing a program in the flash memory which is a kind of non-volatilized memory as a way, stationing permanently the program further read from the exterior on RAM, etc. In this example, and the user program for particular application is stored in this portion [-izing / un-volatilizing / a portion] with the program for picture adjustment. / a part of memory 4 / using a flash memory / un-volatilizing The resident program in a flash memory is read from IC card 50 or FDD if needed, since it

can rewrite, though a common handicap computer is used, it can offer the exclusive handicap computer of the particular-application sense, and moreover, it can respond also to upgrade of a program flexibly.
[0022] The digital camera adapter 20 is constituted so that the head of the aforementioned main part 1 of a handicap computer may be made to intervene in between and can be directly equipped with the GPS adapter 30 removable. The digital camera adapter 20 is the composition which contained the image pck-up unit which considered the lens 22 for carrying out image formation of the image to CCD21 and CCD21 concerned as shown in drawing 4 as main composition in the adapter case 23. The opening 24 used as the optical path to the aforementioned lens 22 is formed in the adapter case 23 side, and the male type bus joint terminal 25 corresponding to the aforementioned bus joint terminal 8 prepared in the main part 1 of a handicap computer is formed in adapter case 23 inferior surface of tongue.
[0023] The transparent resin board and the lens are attached in the aforementioned opening 24, and the optical path to CCD21 is formed by being combined with the lens 22 contained in the adapter case 23. A lens 22 and the lens attached in opening 24 may adopt any of a glass lens or a resin lens. The resin lens from a viewpoint which achieves lightweight-izing and low-cost-ization is desirable. The structure where it can move forward and backward may be added to a lens, and a focal function may be realized. Moreover, a lens can be made only with one sheet directly attached in opening 24, and can also aim at curtailment of part mark. Furthermore, the single image pck-up parts which CCD21 and the lens 22 are unifying from the beginning can also be used. The formation position of opening 24 may not be limited to the thing of the example of drawing, but the upper surface and the tooth back of the adapter case 23 are sufficient as it.
[0024] CCD21, a lens 22, and some elements 26 are directly mounted in the single substrate 27, and as they are located on the path of the light in which the optical axis which ties the CCD21 and lens 22 carries out incidence from the opening 24 of an adapter case, they are arranged. And from the unilateral of the aforementioned substrate 27, the multicore flat cable 28 is drawn and the other end of the cable concerned is connected by the male type bus joint terminal 25 (not shown). Thus, since all the principal parts of optical system and an electric system are carried on one substrate 27, the assembly of the digital camera adapter 20 is very easy, and can also make assembly cost low.
 [0025] Although some elements 26 are carried on the substrate 27, these elements 26 are limited only to the element indispensable for making the output signal from CCD21 match with a bus line, and neither a microprocessor nor memory is carried. The image output signal from CCD21 is directly sent to the microprocessor 3 in the main part 1 of a handicap computer via a bus, and after signal processing is carried out in the main part of handicap computer 1 interior, it is displayed on display 6. The current supply to the digital camera adapter 20 is also supplied through a bus line from the main part 1 of a handicap computer. Thus, since only necessary minimum parts are used for the digital camera adapter 20, the digital camera adapter 20 can be offered cheaply.
[0026] Drawing 5 is other examples of the internal structure of the digital camera adapter 20. In this example, while mounting image pck-up part 21a which united CCD and the lens with substrate 27a which carried out direct pattern formation of the connection terminal area to the unilateral side by etching etc. and being this substrate 27a in a set-up state in adapter case 23a, the case exterior was made to carry out penetration exposure of the connection terminal area of substrate 27a, and the outcrop is directly used as male type bus joint terminal 25a. If it does in this way, since it will become unnecessary to prepare an adapter side bus joint terminal separately and it will become unnecessary to use a multicore flat cable, much more curtailment of the number of assemblers can be aimed at. Although the thing of the example of drawing uses image pck-up part 21a which unified CCD and the lens, it cannot be overemphasized that it is good also considering CCD and a lens as another parts.
[0027] GPS31 of the communication satellite use called the so-called global PONISHONINGU system which is a position measuring device absolutely is included in the GPS adapter 30. The male type bus joint terminal 33 and the scalpel type bus joint terminal 34 are formed in case 32 superficies of the GPS adapter 30, and the male type bus joint terminal 33 is constituted so that the bus joint terminal 8 of the main part 1 of a handicap computer can be equipped and another side and the scalpel type bus joint terminal 34 can be equipped with the digital camera adapter 20 or a printer 40. GPS31 can measure a

watcher's current position by about several m error range in response to the position signal from a communication satellite, and the work which specifies whether a watcher, i.e., a verification person, is on a drawing or map information in which position now by sending out this position data to the main part 1 of a handicap computer becomes easy. Therefore, when this handicap computer deals with map information, especially the thing made to equip the GPS adapter 30 is desirable. In addition, when this handicap computer deals with information, such as an architectural-design drawing and a floor plan, the GPS adapter 30 is unnecessary and the bus joint terminal 8 of the main part 1 of a handicap computer is equipped with the digital camera adapter 20 or a printer 40 in this case.

[0028] Inside such a handicap computer of hardware composition, each means by which the content of processing shown by drawing 3 is realizable is built by software or hardware. Although the procedure which makes an example the case where "the floor plan of an apartment" is stored in the memory 4 of this handicap computer here, explains, and records an on-site situation based on this floor plan is described, you may be a more complicated architectural-design drawing as drawing information, map information, etc. which are stored in memory 4.

[0029] First, a storage means 11 to store the drawing information on the circumference including a verification schedule site <a> is established. Although it is desirable that it is sufficient capacity to carry out simultaneous storing of the floor plan for two or more houses as for the memory space of the storage means 11, it assumes that the floor plan for Ichinohe is stored in the storage means 11 here, and goes ahead with the talk. This storage means 11 is usually constituted by a part of aforementioned memory 4. Drawing information <a> may be vector data and may be an image data.

[0030] Next, the selection display means 12 which calls alternatively the drawing information on narrow area including a concrete verification part <a1> on display 6, and carries out a graphic display from the drawing information on the whole circumference stored in the storage means 11 <a> (namely, drawing information on broader-based area <a>) is established. Extraction of the drawing information <a1> on the narrow area from the drawing information on the whole circumference <a> Display the drawing information on the whole circumference <a> on display 6 first, and cursor movement key 7b is operated on this display screen. After moving cursor to the nearby installation position of the verification part on the display screen, it carries out by making an area change function key (not shown) push, or carrying out by directing the nearby installation position of an applicable part directly with a pen input unit etc. is taken into consideration. Moreover, laminating arrangement of the pressure-sensitive formula touch panel which can carry out the coordinate directions of the display screen directly is carried out in the front face of the display screen, and pushing an applicable part with a finger is also taken into consideration.

[0031] Furthermore, the verification part specification directions means 13 which carries out the specific directions of the part for verification which it is going to verify from now on on a display means out of the drawing information on the narrow area by which the graphic display was carried out <a1> is established on display 6. For example, supposing a verification part is a glass window by the side of a veranda, into the drawing information on the narrow area currently displayed on the screen <a1>, cursor 14 will be moved to the glass window portion by the side of a veranda, and "a definite key" etc. will be pushed. It is the same as that of the above that a ** N input unit and a pressure-sensitive formula touch panel can be used also here.

[0032] Moreover, a position data calculation means 15 to compute the position data X and Y on the applicable drawing of the part by which did in this way and specific directions were carried out on the display means is established. This real work is borne by the microprocessor 3.

[0033] Furthermore, a related storage processing means 16 to associate and memorize the real map image data <b> and the aforementioned position data X and Y of a verification part which were obtained by the image pck-up unit is established, and real map image data <b> and the position data X and Y are associated mutually, and are memorized. Although package storage may be carried out, real map image data <b> and the position data X and Y may be memorized to a respectively different memory area, and may carry out string attachment of both the data. Thus, when the position data X and Y are equivalent to real map image data <b>, it is always managed to which portion in drawing information <a> each on-

the-spot photo image data <b> corresponds. For example, "the glass window by the side of a veranda" has breakage, and these are memorized by memory, after the position data (1024, 611) are added to the real map image data of the damaged glass window, when X on the drawing information on this "glass window by the side of a veranda" <a> and a Y coordinate are (1024, 611).
[0034] This handicap computer consists of combination of hardware and software in this way. Next, the whole on-site situation record method composition which used such a handicap computer is described according to each process. this invention method is constituted from <a process A> by <Process F>, as shown by drawing 6 - drawing 11 . Each process has the following content.
[0035] <Process A> (drawing 6)
The drawing information on the broader-based area which includes a verification schedule site from the library of the drawing database 71 currently built in the computer 70 installed in fixed bases, such as office, is passed to the handicap computer 60. Although various purpose-oriented maps, such as geographical feature maps including construction drawings, such as an engineering-drawing side and a floor plan, and a general map, a river map, and a road map, etc. are applicable as drawing information, the drawings or maps other than these are not excepted. Moreover, the computer 70 is constituted so that it may connect with the communication network, for example, information interchange with the large-sized computer of the head office, the computer of other offices, and also men of the same trade's computer can be performed. Delivery of the drawing information from the computer 70 to the handicap computer 60 has the method of performing through a portability storage, and the method of performing by carrying out the direct file of a computer 70 and the handicap computer 60 with a cable. As a portability storage, an IC card, a floppy disk, MO, CD-ROM, etc. can be used. It is most desirable to use the IC card of a non-contact coupling scheme from a viewpoint of handling ease. without it takes the gestalt of a data copy since the writing to this medium is not made, when using CD-ROM -- drawing database 71 the very thing of a computer 70 -- many -- CD-ROM of several sheets constitutes, CD-ROM which corresponds from here is chosen, and the gestalt read with the CD-ROM drive attached to the handicap computer 60 is taken since storing of a mass data is possible for CD-ROM -- many -- it is possible to carry out package hold of several drawings, and since development of CD-ROM which held general-purpose map data especially has also already been performed, these can be used However, in CD-ROM use, in order to return the real map image data and position data from the handicap computer 60 to a computer 70, it is needless to say that the rewritable medium of an IC card or a floppy disk is needed.
[0036] In explanation after this, the example which creates the thing information on a ready-built house based on this map information for map information from the meaning explained more concretely is described.
[0037] <Process B> (drawing 7)
The handicap computer 60 by which the map information on the circumference including a verification schedule site (broader-based map information) changed into the storing state is brought in a verification schedule site, and short-range map information including a concrete verification part is alternatively called on the display screen. After the call of short-range map information moves cursor on the screen where broader-based map information is displayed by operating cursor movement key 7b, it is performed by pushing a definite key, or it directs directly using a pen input unit. Moreover, when the handicap computer 60 is equipped with the GPS adapter 30, the call of short-range map information is more easy. That is, while receiving the electric wave from two or more communication satellites and carrying out automatic meter reading of the current position only by operating GPS after on-site arrival, the applicable coordinate in broader-based map information is deduced from this called-for absolute position, and short-range map information including a verification site is automatically displayed on the display screen.
[0038] <Process C> (drawing 8)
The specific directions of the concrete verification site are carried out on a display means into the short-range map information displayed on the screen. Operation of cursor movement key 7b, a pen input unit, etc. perform specific directions like the last process B. And the position data X and Y corresponding to

this point by which specific directions were carried out are computed by the microprocessor. In addition, the precision of a GPS adapter is very high, and these the operations of all can also be left to GPS, without performing manual operation about presenting of broader-based map information, or specific directions of the concrete verification site on short-range map information, when position measurement can be performed within error range (2-3m).

[0039] <Process D> (drawing 9)

A verification part is picturized after adjusting the posture of the handicap computer 60 so that a concrete verification part may be caught in the visual field of an image pck-up unit. In the thing of the example of drawing, a single house house is a candidate for an image pck-up, and the image of a house projects on the display screen. Since the image which the image pck-up unit has caught now can carry out monitoring with display 6, it adjusts so that the specific key on a keyboard 7 may be operated and it may become the optimal picture. And a definite key is pushed after checking that a picture is an optimum state. What is necessary is not to perform adjustment of a picture each time, and just to follow the last adjustment state as it is, if it is photography in the same environment.

[0040] <Process E> (drawing 10)

The real map image data and the aforementioned position data X and Y which were sent out to the microprocessor via the bus are associated and memorized from an image pck-up unit. It is managed to which portion in map information the real map image data of a house correspond by this.

[0041] <Process F> (drawing 11)

If an image pck-up in a site is finished, the real map image data mutually stored by relating in the storage means of the main part 1 of a handicap computer and position data will be passed to the computer 70 installed in the fixed base. Delivery of the data from the handicap computer 60 to a computer 70 can adopt the same technique as the aforementioned process A.

[0042] By passing through each above-mentioned process, the information with which the real map image data of a house and the position data on the map of the location site of a house were united is acquired. Since the appearance of a house and the environment near a site also become clear with the real map image data of a house while the place of a house becomes clear with the position data on a map, as real estate information, it is very useful. As for this information, using as itself can also add and use the related information of further others.

[0043] As mentioned above, although the example which connects the case where connect the position data on a floor plan side and the real map image data of a breakage, and a construction state is inspected, and the position data on a map and the real map image data of a house, and creates the thing information on a ready-built house was described, this invention is widely applicable to other fields. For example, use of carrying out maintenance check of a building based on a construction drawing, performing passage maintenance based on a road map, performing river maintenance based on a river map, performing track maintenance based on a railroad track map, performing engineering-works construction and verification of a passage construction situation, or it being based on a said place view based on a general map or a road map, and verifying an accident site is also possible. Moreover, as application which changed a little, it is applicable also to control record of parking violation. When using it for record of control of parking violation, after inputting the number of a vehicle, a type of a car, parking time and time, a parking lot place, etc. from a keyboard, the sight which shows a parking state most exactly is picturized.

[0044]

[Effect of the Invention] According to this invention, the real map image data of a site and this site can associate the position data in which it is shown to which position on a drawing or a map it corresponds, and can record now. Therefore, the complicated work of checking on a drawing the part which took the photograph further after bringing both the camera and the drawing like before and taking a photograph on the spot becomes unnecessary. Moreover, since the real map image data outputted from the image pck-up unit using the charge-coupled device are a digital signal, they fit computer-processing, and they can carry out high-speed processing also of data transfer or the data processing. Moreover, it is also possible to carry out the direct keyboard entry of the related information, such as a number and a sign,

by alter operation means to be attached to a handicap computer, and package record of other data constellations relevant to real map image data can also be carried out with position data.
[0045] Moreover, when a removable portability storage is formed to both the computers according to claim 2 installed in a handicap computer and a fixed base like and the data transfer between both computers is made to be performed using this portability storage, more advanced data processing and more advanced data control become possible.
[0046] Moreover, since automatic meter reading of the outline position of the present location position is carried out when [according to claim 3] GPS of the communication satellite use which can measure a position absolutely is attached to this handicap computer like, it becomes possible from whole map information to pinpoint the outline position of the present location position automatically, and the specific directions of the part for an image pck-up can carry out easily on a display means only by tuning finely on the basis of the data of this location position.
[0047] When [according to claim 4] an image pck-up unit is made to the main part of a handicap computer as it is removable, an image pck-up unit is removed if needed, and various functions processing is [like] realizable, it being possible to connect other peripheral devices, such as a printer and a modem, to the bus joint terminal with which it was equipped with the image pck-up unit, and maintaining the handiness of a handicap computer.

[Translation done.]